Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of:	)	
	)	
Amendment Of The Commission's Rules To	)	RM - 11640
Establish A Next-Generation Air-Ground	)	
Communications Service On A Secondary	)	
Licensed Basis In The 14.0 to 14.5 GHz Band	)	

COMMENTS OF GOGO INC.

Gogo Inc. ("Gogo"), formerly known as Aircell, hereby submits these comments in the above-referenced docket in response to the Petition for Rulemaking filed by Qualcomm Incorporated ("Qualcomm") on July 7, 2011,[1] which asks the Commission to establish a Next Generation Air-Ground ("Next-Gen AG") mobile communications service to operate on a secondary licensed basis at 14.0 to 14.5 GHz. For the reasons set forth herein, Gogo encourages the Commission to establish the Next-Gen AG service.

I. As a Market Leading Provider of Air-Ground Communications Across Many Platforms, Gogo Is Particularly Qualified to Comment on the Need for Additional Air-Ground Spectrum

With over 20 years of experience, Gogo has long been a pioneer and market leader for in-flight communications. In 2008, less than two-and–a-half years after receiving its 800 MHz air-ground license from Auction 65, Gogo constructed the first nationwide broadband air-ground network in the United States and began offering in-flight broadband service.[2] Presently, about 1200 aircraft in the commercial airline fleet in the United States are equipped with the Gogo

[1] *See Amendment of the Commission's Rules to Establish a Next-Generation Air-Ground Communications Service on a Secondary Licensed Basis in the 14.0 to 14.5 GHz Band*, Petition for Rulemaking, RM - 11640 ("*Petition*").

[2] Gogo's subsidiary, AC BidCo LLC, holds WQFX728, which provides authority to operate in the 849-850.5 MHz / 894-895.5 MHz band. LiveTV, a subsidiary of JetBlue, holds a 1 MHz license in the adjacent frequency band.

service. Through its Aircell general aviation subsidiary, Gogo's air-ground communications equipment is offered as standard or optional by virtually every aircraft manufacturer. Presently, about 5000 general aviation aircraft are equipped with Gogo's satellite-based Axxess® or Swiftbroadband® systems, and approximately 900 aircraft are equipped with the 800 MHz Gogo Biz® broadband service, which Gogo provides via its 3 MHz air-ground license. In addition to offering in-flight connectivity to passengers, Gogo provides service to the airlines for their own communications, as well as to various federal agencies.

In view of its storied history and leadership in providing air-ground broadband service, Gogo is in an ideal position to comment on the need for, and potential benefit of, a Next-Gen AG service. Moreover, Gogo's successful prior use of shared spectrum makes it particularly well-suited to comment on the proposed air-ground usage at 14.0 to 14.5 GHz, which would be available on a secondary licensed basis. Before switching to satellite technology and to its 800 MHz commercial air-ground license, Gogo initially relied on spectrum held by cellular licensees. By partnering with rural cellular carriers with excess spectrum capacity and employing technological innovations, Gogo was able to provide in-flight service on frequencies used for terrestrial mobile services, without causing interference.

Gogo's evolution from using cellular frequencies to satellite resale service to the 800 MHz air-ground band has stemmed from the company's philosophy of deploying technologically agnostic solutions that afford customers the best service at a competitive price. More recently, Gogo announced plans to add Ka-band satellite capability in the near future, depending on the availability of new equipment and satellite launches.[3] Thus, Gogo's experience in launching successful air-ground communications services across a variety of platforms, including its unique

[3] Press Release, Aircell and Gogoinflight Announces Technology Roadmap (Mar. 9, 2011), *available at* http://pr.gogoair.com/press-room/2011/03/aircell-and-gogoinflight-announces-technology-roadmap.

experience in designing a network that relied upon sharing spectrum, lends particular credibility to Gogo's support for the Next-Gen AG proposal.

II. The Need for Additional Air-Ground Spectrum Continues to Grow with the Increasing Consumer Adoption and Use of Mobile Broadband

As Qualcomm's Petition makes clear, the use of mobile broadband is growing at an unprecedented rate, and the dramatic rise in mobile consumption and demand is not limited to terrestrial networks.[4] The Commission's prior recognition of the "substantial and rapidly growing consumer, airline, and service provider interest in access to high-speed Internet and other wireless services onboard aircraft"[5] remains true today. Gogo estimates that more than 200 million people will travel on Wi-Fi enabled flights this year alone, most of whom will carry at least one Wi-Fi equipped device. The interest in onboard data connectivity will further intensify not just with the continued growth in air travel,[6] but also as consumers rely on mobile devices for functionality that extends beyond mere communications and entertainment. Airline passengers now use in-flight broadband not just to access the Internet, but also to stream video, use social networking services, play online games, retrieve email, and perform business functions, such as creating, reviewing, and editing documents, presentations, and photos. Youtube, Netflix and other video websites are some of the largest bandwidth-consuming sites accessed via Gogo. Social networking sites are especially popular among airline passengers. Approximately 50% of all Gogo customers use Facebook, which makes it the most popular in-flight application. The network congestion created by such applications will no doubt increase as customers come to

[4] *See Petition* at 3-13.

[5] *Amendment of Part 22 of the Commission's Rules to Benefit the Consumers of Air-Ground Telecommunications Services*, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 4403 ¶12 (2005) ("*2005 ATG Order*").

[6] Total mainline air carrier and regional enplanements are forecast to increase from 712.6 million in 2010 to 1.27 billion in 2031. Press Release, Federal Aviation Administration, FAA Forecast Fact Sheet (Feb. 15, 2011), *available at* http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=12440.

expect the functionality of in-flight connections to mirror those which are available on the ground.

III. Projected Consumer Demand is Expected to Outstrip Gogo's 3 MHz Broadband License on Some Flights

Gogo has emerged as the leading provider of in-flight connectivity using its 3 MHz air-ground license, which provides spectrum adequate for a single broadband channel. Only by employing sophisticated technical solutions to improve capacity on its network has Gogo been able to achieve data rates that are comparable to typical terrestrial hotspots.

The need for more spectrum remains, despite Gogo's ongoing technical initiatives to find alternative means of improving in-flight service. In addition to employing reasonable engineering solutions to reduce network congestion, Gogo continuously strives to identify new spectrum opportunities and other technologies that may provide additional broadband capacity to Gogo customers. As noted above,[7] Gogo has already announced plans to add Ka-band satellite capability. While Gogo is hopeful that the additional Ka-band technology will further improve its broadband service, satellite may not always provide the best solution for all aircraft and all customers. For example, many regional jets and general aviation aircraft are too small to mount a typical Ku/Ka-band aircraft antenna. Consequently, Gogo routinely evaluates other opportunities to access additional spectrum, including suitable licenses that may become available through the secondary market or through Commission spectrum auctions. However, acquiring nationwide spectrum in traditional commercial mobile bands will not likely be an economically viable solution for Gogo, given the high demand for such spectrum by terrestrial wireless providers.

[7] *See supra* note 3.

IV. A Proposed Next-Generation Air-Ground Mobile Broadband Communications System May Satisfy the Increasing Demand for In-Flight Connectivity

In view of the profound growth in mobile communications and air travel, and the future limitations of the current air-ground spectrum allocation in the 800 MHz band, the Commission should establish a new terrestrial-based air-ground communications service for additional broadband connectivity to domestic aircraft. Access to the 14 GHz band on a secondary basis offers a rare opportunity for the Commission to meet growing consumer demand for improved air-ground data service. Moreover, this band can be shared in a manner that would not only help achieve in-flight connection speeds that parallel those available on terrestrial networks,[8] but which would also increase the spectrum efficiency of the band (which would continue to be used by satellite providers with primary use rights). The proposed Next-Gen AG service would also offer an economically viable option to air-ground service providers, who would not be in competition with terrestrial carriers for the spectrum.

Qualcomm's proposed Next-Gen AG mobile broadband system, designed to operate in 500 MHz of spectrum in the Ku-band on a secondary basis, may significantly mitigate the projected future capacity shortcomings of the current air-ground broadband allocation. As such, Gogo generally supports the proposals set forth by Qualcomm. As discussed below, a licensee authorized to use such spectrum should be allowed to provide service to the wide diversity of air-ground broadband users, including the airlines and law enforcement agencies that rely so heavily on in-flight connectivity. Moreover, while Gogo agrees that the Commission should auction two separate 250 MHz secondary mobile licenses for Next-Gen AG service, no single entity should be permitted to acquire or hold both Next-Gen AG licenses for a period of five years. Finally,

[8] *See Petition* at 13 (noting that if the Commission allocates the spectrum in two 250 MHz blocks, the aggregate throughput for each system would be approximately 150 Gigabits per second).

consistent with the rules governing the existing commercial air-ground service, the licensees of any Next-Gen AG spectrum should be required to satisfy service and performance requirements within five years of the license grant.[9]

A. The Next-Gen AG System Should Support the Needs of Passengers, Law Enforcement, and the Airlines

In addition to serving the broadband needs of airline passengers, the Next-Gen AG system should be available to accommodate the connectivity needs of the airlines themselves, as well as the law enforcement agencies and officers that patrol the airways. Gogo currently provides connectivity service to the Federal Air Marshal Service of the Transportation Security Administration ("TSA"), which is tasked with detecting and deterring hostile acts targeted at U.S. airlines, airports, passengers, and crews. In 2009, the NTIA recognized the importance of this service when it reported that the TSA's "only spectrum available" for "mission critical air-to-ground communications for Federal law enforcement officers in flight" was found in the 800 MHz band – *i.e.*, Gogo's licensed spectrum.[10] The NTIA further noted that "[t]he vast majority of Federal public safety agencies do not currently use broadband networks to support mission-critical voice communications,"[11] even though "[w]ireless broadband will play an important role in improving public safety communications interoperability and mission effectiveness."[12]

The current allocation of air-ground spectrum cannot support all of the enhanced broadband services and applications that law enforcement will require in the future, such as

---

[9] 47 C.F.R. § 22.873(b).

[10] NTIA, *Executive Branch Views on Public Safety, Homeland Security and Cybersecurity Elements of A National Broadband Plan* (Dec. 2009) at 4, *available at* http://www.ntia.doc.gov/files/ntia/publications/ntia_broadbandplan_cybersecurity.pdf.

[11] *Id.*

[12] *Id.* at 3.

digital imaging, remote database and system access, video conferencing, and real-time video surveillance through the use of in-cabin security cameras. The proposed Next-Gen AG network could significantly aid in meeting such law enforcement needs.

Licensees to the additional air-ground spectrum should also be permitted to provide connectivity services to the airlines themselves, which could use the service in a variety of ways. For example, the airlines could use the additional broadband capacity to promote new safety, navigation, and in-flight entertainment ("IFE") applications for commercial airlines and smaller aircraft operators alike. Likewise, when a passenger is onboard a flight that has been delayed, the airline could communicate with the passenger en route to convey a revised travel itinerary, which would obviate the passenger's need to contact customer service at the destination airport. Other airline applications could include:

- transmitting enhanced weather and flight routing data;
- offering video conferencing services to assist in medical or other emergencies;
- transmitting flight maps (which are typically many gigabytes in size);
- transmitting detailed reports from the flight management computer regarding detected failures;
- updating media content of onboard IFE servers; and
- eliminating onboard IFE servers (reducing weight and saving fuel), and offering on-demand IFE content transmitted directly to each passenger from the ground.

In view of the diverse ways that law enforcement and the airlines currently use or will use broadband, the Commission should not limit the Next-Gen AG system in such a manner that would only serve airline passengers. Rather, the Commission should use this opportunity to allow all stakeholders in the airline industry to benefit from improvements in air-ground connectivity.

B. To Promote Competition, No Single Entity Should Be Permitted to Acquire or Hold Both Next-Gen AG Licenses for a Period of Five Years

Gogo agrees with Qualcomm that the Commission should auction two separate 250 MHz secondary mobile licenses for Next-Gen AG systems at 14.00 to 14.25 GHz and 14.25 to 14.50 GHz. To improve the proposal, however, Gogo urges the Commission to adopt a five-year eligibility restriction that would prohibit any one entity (or any of its affiliates) from acquiring both 250 MHz licenses at auction, consistent with Commission precedent and similar to the existing rules for commercial air-ground service in Part 22 of the FCC rules.[13] Such a restriction would promote competition by ensuring that at least two parties have an opportunity to provide air-ground broadband service in the 14 GHz band.

Promoting competition is a central tenet of the Commission in conducting spectrum auctions. In 1993, Congress authorized the FCC to grant spectrum licenses "through a system of competitive bidding,"[14] and further directed the FCC to "promot[e] economic opportunity and competition and ensur[e] that new and innovative technologies are readily accessible to the American people by avoiding excessive concentration of licensees and by disseminating licenses among a wide variety of applicants."[15]

The restriction against holding both licenses should continue for an initial period of five years. Such a five-year period would afford the competing licensees ample time to build out and begin competing. By allowing time for the air-ground broadband market to develop further, the Commission would have more reliable evidence of whether the market can efficiently accommodate more than one licensee in the 14 GHz band. Finally, a five-year transfer restriction

[13] *See* 47 C.F.R. § 22.853.

[14] 47 U.S.C. § 309(j)(1).

[15] *Id.* § 309(j)(3)(B); *see also Genachowski, Remarks* (noting that spectrum auctions have enabled "new competition that lowered prices for consumers and accelerated the pace of innovation").

would run concurrent with the proposed period within which a licensee would be required to demonstrate that it is providing "substantial service" in the air-ground spectrum, as set forth more fully below.[16] Allowing a licensee to transfer its license before the end of such five-year period would effectively render the performance obligations proposed below meaningless, and allow an entity to obtain the air-ground license simply for speculative purposes. At the expiration of the five-year period, the Commission could then determine whether it should continue to enforce such an ownership restriction, or whether permitting a single entity to hold both licenses within the 14 GHz air-ground spectrum would in fact create a more robust Next-Gen AG system.

C. The Licensees of the Next-Gen AG Spectrum Should Be Required to Satisfy Service and Performance Requirements Within Five Years of the License Grant

Gogo further proposes that licensees be required to satisfy a substantial service or performance requirement within five years after the grant of the license, again consistent with the rules governing the existing commercial air-ground service.[17] The Commission could also adopt the same safe harbors for such licensees to demonstrate "substantial service:" (i) construction and operation of 20 ground stations, with at least one ground station located in each of the ten Federal Aviation Administration regions; or (ii) construction and operation of ground stations capable of serving the airspace of at least 25 of the 50 busiest airports (as measured by annual passenger boardings).[18] Such a five year performance requirement would ensure that consumers benefit quickly from the additional air-ground spectrum, consistent with the statutory mandate to "include performance requirements . . . to prevent stockpiling or warehousing by licensees, and

[16] *See infra* Section IV.C.

[17] *See* 47 C.F.R. § 22.873 (defining "substantial service" as "service that is sound, favorable, and substantially above a level of mediocre service that just might minimally warrant renewal").

[18] *Id.* § 22.873(b).

to promote investment in and rapid deployment of new technologies and services."[19] Ensuring that the spectrum is deployed rapidly is especially important in the instant context, where – in sharp contrast to terrestrial allocations – there is only four megahertz currently allocated for commercial air-ground service.

V. Conclusion

Demand for mobile broadband, including high-speed Internet and wireless services onboard aircraft, is growing at a historic pace. Accordingly, the Commission should address the anticipated shortage of air-ground spectrum by establishing a new mobile communications service for in-flight broadband connectivity to operate on a secondary licensed basis at 14.0 to 14.5 GHz. Gogo urges the Commission to conclude this proceeding as expeditiously as possible to facilitate the rapid deployment of such spectrum for additional air-ground broadband service.

Respectfully Submitted,

GOGO INC.

/s/ William J. Gordon
William J. Gordon
Vice President for Regulatory Affairs
1725 I Street, NW
Suite 300
Washington, D.C. 20006

/s/ Michele C. Farquhar
Michele C. Farquhar
David Martin
Christopher J. Termini
HOGAN LOVELLS US LLP
555 Thirteenth Street, N.W.
Washington, D.C. 20554

Its Attorneys

Dated: September 29, 2011

[19] 47 U.S.C. § 309(j)(4)(B); *see also 2005 ATG Order* at 4441 ¶ 84.